

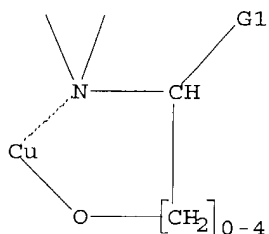
10/643,272

(FILE 'HOME' ENTERED AT 13:17:27 ON 15 MAR 2004)

FILE 'REGISTRY' ENTERED AT 13:17:49 ON 15 MAR 2004

L1 STRUCTURE UPLOADED
L2 STRUCTURE UPLOADED

=> d l2
L2 HAS NO ANSWERS
L2 STR



G1 Me, Et, n-Pr, n-Bu, Ph, CF3, CCl3, H

Structure attributes must be viewed using STN Express query preparation.

=> s l2
SAMPLE SEARCH INITIATED 13:20:25 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 2527 TO ITERATE

39.6% PROCESSED 1000 ITERATIONS 21 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 47526 TO 53554
PROJECTED ANSWERS: 624 TO 1498

L3 21 SEA SSS SAM L2

=> s l2 full
FULL SEARCH INITIATED 13:20:31 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 49754 TO ITERATE

100.0% PROCESSED 49754 ITERATIONS 899 ANSWERS
SEARCH TIME: 00.00.01

L4 899 SEA SSS FUL L2

=> fil caplus
COST IN U.S. DOLLARS
FULL ESTIMATED COST

	SINCE FILE ENTRY	TOTAL SESSION
	157.10	157.31

FILE 'CAPLUS' ENTERED AT 13:20:39 ON 15 MAR 2004
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FILE COVERS 1907 - 15 Mar 2004 VOL 140 ISS 12
FILE LAST UPDATED: 14 Mar 2004 (20040314/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l4

L5 459 L4

=> s l4 and CVD

459 L4

54910 CVD

L6 3 L4 AND CVD

=> d 1-3 bib abs

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:910556 CAPLUS

DN 138:313284

TI Fluorinated aminoalkoxide CuII complexes: new CVD precursors for deposition of copper metal

AU Chi, Yun; Hsu, Peng-Fu; Liu, Chao-Shiuan; Ching, Wei-Li; Chou, Tsung-Yi; Carty, Arthur J.; Peng, Shie-Ming; Lee, Gene-Hsiang; Chuang, Shiow-Huey

CS Department of Chemistry, National Tsing Hua University, Hsinchu, 30013, Taiwan

SO Journal of Materials Chemistry (2002), 12(12), 3541-3550

CODEN: JMACEP; ISSN: 0959-9428

PB Royal Society of Chemistry

DT Journal

LA English

OS CASREACT 138:313284

AB Volatile low-melting CuII metal aminoalkoxide complexes

Cu[OC(CF₃)R₁CH₂NHR₂]₂ (R₁ = CF₃ or CH₃; R₂ = CH₂CH₂OMe, Bui, or But) and Cu[OC(CF₃)R₁CH₂NMe₂]₂ (R₁ = CF₃ or CH₃) were synthesized and characterized by spectroscopic methods. A single-crystal x-ray diffraction study on Cu[OC(CF₃)₂CH₂NHCH₂CH₂OMe]₂ shows that one methoxyethyl group of the aminoalkoxide ligand forms an intramolecular dative bond to the Cu atom to produce a square-pyramidal geometry at the metal center, while the second is linked to the Cu atom of the adjacent molecule, giving an N₂O₄ octahedral coordination arrangement. For the second Bui-substituted complex, Cu[OC(CF₃)₂CH₂NHBui]₂, the x-ray structural analysis demonstrated an N₂O₂ square-planar geometry, with one alkoxide O atom forming strong H-bonding to an adjacent H₂O molecule. Metal CVD experiments were carried out, showing that the source reagents Cu[OC(CF₃)₂CH₂NHBui]₂, Cu[OC(CF₃)₂CH₂NHBut]₂, and Cu[OCMe(CF₃)CH₂NHBui]₂, which possess a secondary amino group, are capable of depositing Cu metal at 250-300° under inert Ar carrier gas, while Cu[OCMe(CF₃)CH₂NMe₂]₂, with a tertiary amine group, requires the use of reductive H₂ carrier gas to induce metal deposition at lower temperatures.

RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:377902 CAPLUS

DN 127:43952

TI Syntheses, Structures, and Thermal Behavior of Cu(hfacac) Complexes

Derived from Ethanolamines

AU Pinkas, Jiri; Huffman, John C.; Bollinger, John C.; Streib, William E.;
Baxter, David V.; Chisholm, Malcolm H.; Caulton, Kenneth G.

CS Departments of Chemistry and Physics, Indiana University, Bloomington, IN,
47405-4001, USA

SO Inorganic Chemistry (1997), 36(14), 2930-2937
CODEN: INOCAJ; ISSN: 0020-1669

PB American Chemical Society

DT Journal

LA English

AB Novel precursors for MOCVD of metallic Cu were synthesized and
structurally characterized. These precursors are composed of Cu(hfacac)₂,
which serves as a volatile source of Cu, and amino alcs., which act as
reductants and anchor firmly to the Cu center through the amine unit. In
some cases, a proton transfer from the coordinated alc. to the hfacac
ligand gave an alkoxide unit and the release of the free Hhfacac.
Metallic Cu films can be deposited by MOCVD at 300° without any
external reductant. Crystal data: Cu(hfacac)₂·C₇H₈ (-103°),
a 6.510(6), b 8.594(7), c 18.478(15) Å, orthorhombic space group Pmmn,
Z = 2; Cu(hfacac)₂(H₂NCH₂CH₂OH) (-158°), a 13.145(1), b 13.418(1),
c 11.245(1) Å, α 110.39(1), β 99.12(1), γ 97.90(1)°, triclinic space group P.hivin.1, Z = 4;
[Cu(hfacac)(Me₂NCH₂CH₂O)]₂ (-153°), a 9.259(2), b 12.011(3), c
6.304(1) Å, α 91.19(1), β 106.66(1), γ 74.83(1)°, triclinic space group P.hivin.1, Z = 1;
Cu(hfacac)[N(CH₂CH₂OH)₂(CH₂CH₂O)]·MeOH (-168°), a 10.075(4),
b 8.611(4), c 19.259(9) Å, β 99.82(2)°, monoclinic space
group P21/m, Z = 4.

L6 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1993:682537 CAPLUS

DN 119:282537

TI Metalorganic chemical vapor deposition of copper from copper(II)
dimethylaminoethoxide

AU Young, V. L.; Cox, D. F.; Davis, M. E.

CS Dep. Chem. Eng., Virginia Polytech. Inst. State Univ., Blacksburg, VA,
24061, USA

SO Chemistry of Materials (1993), 5(12), 1701-9
CODEN: CMATEX; ISSN: 0897-4756

DT Journal

LA English

AB Cu metal films were grown on single-crystal SrTiO₃(100) by the thermal
decomposition of Cu dimethylaminoethoxide in inert atmospheric at
150-270°. Films grown at 200° are Cu metal, free
from contaminants, while higher temps. result in significant C and O
incorporation. Deposition products were identified by FTIR spectroscopic
anal. of the reactor gas phase in situ and by mass spectroscopic anal. of
the reactor exit gas during deposition. At 200°, deposition occurs
by interdependent β-hydride elimination and reductive elimination
reactions which produce (dimethylamino)ethanal, (dimethylamino)ethanol,
and Cu metal. β-Hydride and reductive elimination reactions are also
dominant at 250°; however, the competition of ligand fragmentation
reactions with the whole-ligand eliminating reactions leads to C and O
contamination of the Cu metal film.

=> s 15 and thin film
491261 THIN
812074 FILM
122543 THIN FILM
(THIN(W) FILM)

L7 2 L5 AND THIN FILM

=> d 1-2 bib abs

L7 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1992:418725 CAPLUS
 DN 117:18725
 TI Formation of high temperature superconductor thin films by sol-gel techniques
 IN Whitwell, George E.; Antezzo, Meiylin F.
 PA AKZO N. V., Neth.
 SO U.S., 3 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5087609	A	19920211	US 1990-586656	19900924
PRAI	US 1990-586656		19900924		

AB A process for forming an alkoxide-derived YBaCu oxide high-temperature superconductor **thin film** by sol-gel processing is described. It comprises 1st forming a **thin film** comprising solubilized Y and B alkoxides and Cu amino alkoxide, under an inert gas atmospheric, on a nonreactive substrate, the amount of Cu amino alkoxide being in excess of the stoichiometric amount to compensate for losses due to its volatility. The coating composition is then heated 1st in a moisture-laden inert gas atmospheric, to hydrolyze the alkoxides, to temps. in excess of the formation temperature of the superconductor. It is thereafter calcined in an O atmospheric at higher temps. to form the superconductor **thin film**.

L7 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1990:642599 CAPLUS
 DN 113:242599
 TI Application of sol-gel techniques to **thin-film** superconductor systems
 AU Wandass, J. H.; Cambria, F. M.; Whitwell, G. E.
 CS Akzo Res. Lab., Akzo Chem. Inc., Dobbs Ferry, NY, 10522, USA
 SO AIP Conference Proceedings (1990), 200(High T Supercond. Thin Films: Process., Charact., Appl.), 157-64
 CODEN: APCPCS; ISSN: 0094-243X
 DT Journal
 LA English
 AB This paper discusses the preparation and characterization of sol-gel produced thin films for barrier layer and high Tc superconductor applications. Hydrolyzed metal alkoxide solns. were spin coated on Si substrates with subsequent thermal processing. Barrier layers of alkaline earth oxides, perovskites, Y2O3, ZrO2 and others were produced. Characterization was performed via SEM, XRD, ESCA, Auger depth profiling and four point probe were fairly smooth with some cracking and pitting present. Si migration was severe for alkaline earth thin films on Si wafers. Some perovskite films on Si showed formation of Ba-Si-O phases at the Si interface. Thin films of 1-2-3 on sol-gel produced barrier layers of SrTiO3 or ZrO2 on Si showed Ba pile up at the Si interface and were not superconducting. 1-2-3 Layers deposited on single crystal ZrO2, were superconducting and showed onset temps. of 90 K with zero resistance reached at about 55 K. SEM morphol. differences were observed for the different 1-2-3 preps.

=>

(FILE 'HOME' ENTERED AT 14:14:30 ON 15 MAR 2004)

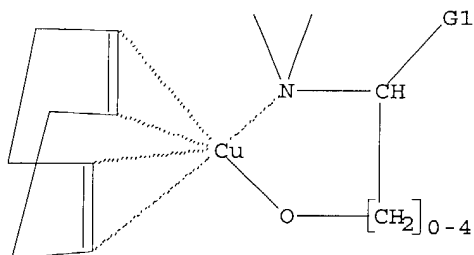
FILE 'REGISTRY' ENTERED AT 14:14:35 ON 15 MAR 2004

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



G1 Me, Et, n-Pr, n-Bu, Ph, CF3, CCl3, H

Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 14:15:07 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 455 TO ITERATE

100.0% PROCESSED 455 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.02

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 7821 TO 10379

PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

=> s l1 full

FULL SEARCH INITIATED 14:15:17 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 8616 TO ITERATE

100.0% PROCESSED 8616 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.01

L3 0 SEA SSS FUL L1

=>

(FILE 'HOME' ENTERED AT 14:14:30 ON 15 MAR 2004)

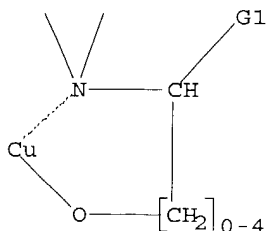
FILE 'REGISTRY' ENTERED AT 14:14:35 ON 15 MAR 2004

L1 STRUCTURE UPLOADED
L2 0 S L1
L3 0 S L1 FULL
L4 STRUCTURE UPLOADED

=> d l4

L4 HAS NO ANSWERS

L4 STR



G1 Me, Et, n-Pr, n-Bu, Ph, CF3, CCl3, H

Structure attributes must be viewed using STN Express query preparation.

=> s l4

SAMPLE SEARCH INITIATED 14:16:23 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 2527 TO ITERATE

39.6% PROCESSED 1000 ITERATIONS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

21 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 47526 TO 53554
PROJECTED ANSWERS: 624 TO 1498

L5 21 SEA SSS SAM L4

=> s l4 full

FULL SEARCH INITIATED 14:16:28 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 49754 TO ITERATE

100.0% PROCESSED 49754 ITERATIONS
SEARCH TIME: 00.00.01

899 ANSWERS

L6 899 SEA SSS FUL L4

=> fil caplus

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
311.26	311.47

FULL ESTIMATED COST

FILE 'CAPLUS' ENTERED AT 14:16:34 ON 15 MAR 2004

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FILE COVERS 1907 - 15 Mar 2004 VOL 140 ISS 12
FILE LAST UPDATED: 14 Mar 2004 (20040314/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l6

L7 459 L6

=> s l7 and cu(I)

MISSING OPERATOR 'CU(I'

The search profile that was entered contains terms or nested terms that are not separated by a logical operator.

=> s l7 and "Cu(I")

UNMATCHED RIGHT PARENTHESIS 'I")'

The number of right parentheses in a query must be equal to the number of left parentheses.

=> s l7 and "Cu(I)"

751888 "CU"

3948510 "I"

10739 "CU(I)"

("CU"(W)"I")

L8 21 L7 AND "CU(I)"

=> d 1-21 bib abs

L8 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:824981 CAPLUS

DN 138:146608

TI Syntheses and crystal structures of zinc and copper(II) nitrate complexes with 1,10-dioxa-4,7,13,16-tetraazacyclooctadecane

AU Guo, Xue-Yan; Zhu, Wen-Xiang; Yan, Xi; Wang, Ru-Ji; Li, Yong

CS Department of Chemistry, Beijing Normal University, Beijing, 100875, Peop. Rep. China

SO Gaodeng Xuexiao Huaxue Xuebao (2002), 23(10), 1842-1846

CODEN: KTHPDM; ISSN: 0251-0790

PB Gaodeng Jiaoyu Chubanshe

DT Journal

LA Chinese

OS CASREACT 138:146608

AB Two new complexes Zn and Cu(II) nitrates with 1,10-dioxa-4,7,13,16-tetraazacyclooctadecane (L) were synthesized. Cu(L)(NO₃)₂ crystallizes in orthorhombic, space group Pbca, a 1.5744(6), b 1.2676(4), c 1.8983(6) nm, Z = 8; Zn(L)(NO₃)₂ crystallizes in orthorhombic system, space group Pnna, a 1.61356(10), b 1.32871(11), c 0.86260(5) nm, Z = 4, V = 1.8494(2) nm³. Structure refinement converged to R₁ = 0.0431, wR₂ = 0.0904 for Cu(L)(NO₃)₂ and R₁ = 0.0718, wR₂ = 0.1950 for Zn(L)(NO₃)₂, resp. Cu(II) and Zn ions are coordinated to four N and two O atoms from the azacrown ether moiety, but not to the nitrate anions. The coordination nos. for both Cu(II) and Zn ions are six. These complexes also were characterized by IR, ¹H NMR and EPR spectroscopies. The cyclic voltammogram shows that Cu(L)(NO₃)₂ undergoes a reversible reduction, Cu(II) → Cu(I)

I) in MeCN at -1.0-0 V, $E_{1/2} = -0.56$ V and an irreversible reduction, $\text{Cu(I)} \rightarrow \text{Cu(0)}$ in the range -1.6-0 V, $E_{1/2} = -1.20$ V.

L8 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1996:742038 CAPLUS

DN 126:149656

TI Effect of sulfosalicylate ions on stability of the intermediate in discharge of copper(II) complexes from monoethanolamine electrolytes

AU Safina, L. R.; Petrova, T. P.; Shapnik, M. S.

CS Kazan State Technological Univ., Kazan, Russia

SO Russian Journal of Electrochemistry (Translation of Elektrokhimiya) (1996), 32(11), 1279-1281

CODEN: RJELE3; ISSN: 1023-1935

PB MAIK Nauka/Interperiodica

DT Journal

LA English

AB The effect was studied of sulfosalicylate (SSA3-) on the stability of the Cu(I) intermediate, which is formed in the discharge of Cu(II) complexes at the disk electrode from monoethanolamine electrolytes. The polarization curves for the oxidation of Cu(I) ions at the ring in solution with different concns. of H_3SSA are similar to monoethanolamine solns. An increase in the concentration of H_3SSA in solution

leads

to a decrease both in the current at the disk electrode and in the current at the ring at a disk potential of -0.3 V. The markedly lower strength of the metal-ligand covalent bond, compared with the Cu(II) aqua complexes, and the electrostatic instability testify that the $[\text{Cu}(\text{SSA})(\text{H}_2\text{O})_4]^{2-}$ tends to be energy unstable. This ligand does not stabilize Cu(I) .

L8 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:612543 CAPLUS

DN 121:212543

TI Copper-amine speciation: an electrochemical investigation of the selection of volatile amines for steam generator water

AU Kumbhar, A. G.; Narasimhan, S. V.; Mathur, P. K.

CS Water and Steam Chemistry Laboratory, Applied Chemistry Division (BARC), Indira Gandhi Centre For Atomic Research Campus, 603 102, Kalpakkam, India

SO Analytica Chimica Acta (1994), 294(1), 103-11

CODEN: ACACAM; ISSN: 0003-2670

DT Journal

LA English

AB Pseudopolarog. in combination with differential pulse anodic stripping voltammetry copper speciation studies (at 50 $\mu\text{g L}^{-1}$ copper concentration) were carried out in aqueous media containing 3-methoxypropylamine (3MPA), 1-dimethylamino-2-propanol (DMPA), 2-dimethylaminoethanol (DMAE) and piperidine (Pip). The copper-amine complexes were identified and their log stability consts. (log K) values were as follows: $[\text{Cu(I)}(\text{3MPA})_2]$: 10.47; $[\text{Cu(II)}(\text{OH})_2(\text{DMPA})_2]$: 20.33; $[\text{Cu(II)}(\text{OH})_2(\text{DMAE})_2]$: 20.51; $[\text{Cu(I)}(\text{Pip})]$: 8.29; $[\text{Cu(I)}(\text{Pip})_2]$: 9.89; $[\text{Cu(I)}(\text{OH})_2(\text{Pip})_2]$: 16.67. Electroredn. mechanisms of these identified species at a hanging mercury drop electrode were studied. The ability of some of the amines to influence the stepwise reduction/oxidation of copper results in impeding its transport in dissolved form in the steam generator water. Hence it is recommended that only those amines that do not stabilize Cu(I) in solution be selected for use as All Volatile Treatment (AVT) reagents for ensuring better performance of steam water circuits in power industries.

L8 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1993:159791 CAPLUS

DN 118:159791

- TI Copper(II) complexes of 3-aminopropanols. Synthesis and crystal structure of a compound containing a trinuclear copper(II) cation and a novel hexanuclear iodocuprate(I) anion
- AU Sillanpää, Reijo; Valkonen, Jussi
- CS Dep. Chem., Univ. Turku, Turku, SF-20500, Finland
- SO Acta Chemica Scandinavica (1992), 46(11), 1072-5
CODEN: ACHSE7; ISSN: 0904-213X
- DT Journal
- LA English
- AB The reaction of Cu(II) with 3-aminopropanol (Hap) and I⁻ in a DMF-MeOH mixture gave a mixed-valence Cu(I)/Cu(II) compound [Cu₃(ap)₄-DMF]₂[Cu₆I₁₀], which crystallizes as triclinic, space group P_h1v1n.1, a 1029.4(2), b 1132.4(2), c 1561.2(3) pm, α 77.89(2), β 76.60(2), γ 82.22(2)°, Z = 1, R = 0.038, R_w = 0.039. Cu(II) forms trinuclear alkoxo-bridged cations with the 3-aminopropanolato ligand, while the Cu(I) ions form hexanuclear iodo-bridged anions. The DMF mol. is weakly coordinated to the Cu(II) ion, with a Cu-O bond length of 260.1(7) pm. The Cu...Cu distances in the trinuclear [Cu₃(ap)₄DMF]₂₂₊ cation are 291.4(1) and 294.5(1) pm. The bridging Cu-O(alkoxy) bond lengths are at 191.0(7)-193.7(6) pm. [Cu₆I₁₀]₄₋ has a crystallog. symmetry C_i and contains an 8-membered ring and 2 6-membered rings. The Cu...Cu distances in the hexamer are 253.7(2)-273.0(2) pm and the Cu-I bond lengths at 249.3(2)-290.9(2) pm.
- L8 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
- AN 1991:34748 CAPLUS
- DN 114:34748
- TI Linear trinuclear copper(II) complex with aminoalcohol and fluoroacetic acid. The crystal and molecular structures of bis[μ-(2-diethylaminoethanolato-N,μ-O)]bis[μ-fluoroacetato-O,O']bis(fluoroacetato)bis(ethanol)tricopper(II)
- AU Smolander, Kimmo; Leisto, Kirsti
- CS Dep. Chem., Univ. Joensuu, Joensuu, SF-80101, Finland
- SO Inorganica Chimica Acta (1990), 169(2), 151-5
CODEN: ICHAA3; ISSN: 0020-1693
- DT Journal
- LA English
- AB Cu₃(DEt)₂(FH₂CCO₂)₄(EtOH)₂ was prepared from Cu(O₂CCH₂F)₂ and 2-diethylaminoethanol (HDEt) and its crystal structure was determined by 3-dimensional x-ray crystallog. It crystallized in the triclinic space group P_h1v1n.1, a 7.963(6), b 8.443(7), c 13.553(6) Å, α 76.16(5), β 81.82(5), γ 87.62(6)°, Z = 1, R = 0.050. Like the F(2) atom, some of the C atoms of the aminoethanolato ligands are disordered with one or more rotational orientations. The 3 Cu(II) ions are in linear arrangement bridged by 1 bidentate carboxylate O atom and 1 2-diethylaminoethanolato O atom. The Cu(1) atom is in 4 + 1 and the Cu(2) atom in 4 + 2 environment, and the Cu(1)-Cu(2) distance 3.126(1) Å. A DEt O atom, 2 FH₂CCOO O atoms and an amino N atom form a distorted square-plane around the Cu(I) atom; the apical site is occupied by an EtOH O atom. The square-plane of the central Cu(2), which lies on the inversion center, consists of 2 DEt O atoms and 2 carboxylato O atoms. The apical sites are occupied by EtOH O atoms.
- L8 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
- AN 1984:477200 CAPLUS
- DN 101:77200
- TI Granulometric composition of fine copper powders prepared by thermal decomposition of copper(II) complexes with monoethanolamine
- AU Khvorov, M. M.; Chirkov, A. S.; Khimchenko, Yu. I.
- CS Inst. Kolloidn. Khim. Khim. Vody, Kiev, USSR
- SO Poroshkovaya Metallurgiya (Kiev) (1984), (4), 1-5
CODEN: PMANAI; ISSN: 0032-4795
- DT Journal

LA Russian
 AB Granulometric composition of fine Cu powders prepared by the thermal decomposition in air of Cu²⁺ complexes with monoethanolamine (I) synthesized by the reaction of Cu formate, CuSO₄, and Cu(NO₃)₂ with I was studied. Differential curves of particle-size distribution had 2 peaks: one showing primary fine particles and the other characterizing the formation of globules, the 2nd one being most clear on the curve corresponding to the powder prepared from the Cu(I)₃(NO₃)₂ complex. The highest average quantity of contacts between particles in a globule and globule size were characteristic for powders prepared from Cu(I)₃(NO₃)₂, and the lowest values of those took place in Cu powders from Cu formate complexes. The formation of fine Cu particles from the latter occurred in the liquid media by the chemical crystallization mechanism.

The process of the thermally activated solid-phase transformation of Cu(I)₃SO₄ and Cu(I)₃(NO₃)₂ proceeded via the formation and growth of new phase nuclei.

L8 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1984:128683 CAPLUS
 DN 100:128683
 TI D.C., A.C. and complex plane polarographic behavior of copper(II) in monoethanolamine, sodium perchlorate/monoethanolammonium perchlorate solutions
 AU Sridhar, P.; Subrahmanya, R. S.
 CS Dep. Inorg. Phys. Chem., Indian Inst. Sci., Bangalore, 560 012, India
 SO Bulletin des Societes Chimiques Belges (1984), 93(1), 1-11
 CODEN: BSCBAG; ISSN: 0037-9646
 DT Journal
 LA English
 AB A detailed investigation of d.c., a.c. and complex plane polarog. behavior of Cu(II) in mixture of monoethanolamine and NaClO₄ and monoethanolamine and monoethanolammonium perchlorate was made. In solns. containing monoethanolamine and NaClO₄, the reduction was found to be a 2-electron addition process, the extended d.c. wave being due to >1 complex species in sluggish equilibrium. The a.c. and complex plane polarog. techniques show reduction due to only 1 of the species. The formula of the species is given on the basis of a.c. summit potential shift with change in ligand concentration. In solns. containing monoethanolamine and monoethanolammonium perchlorate, two 1:1 waves are obtained in d.c. polarog., the separation increasing with increase in monoethanolamine perchlorate concentration. Corresponding to the 2 d.c. polarog. waves, the a.c. and complex plane polarograms also indicate 2 peaks. On the basis of complex plane polarog., the rate consts. of the various processes were determined. Based on the d.c. polarog., the formulae and stability consts. of Cu(II) and Cu(I) complexes were determined.

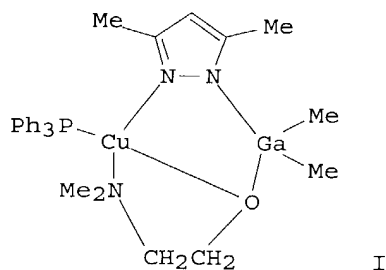
L8 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1983:115632 CAPLUS
 DN 98:115632
 TI Control of redox potentials in mononuclear and dinuclear copper cryptates
 AU Gisselbrecht, J. P.; Gross, M.
 CS Inst. Le Bel, Univ. Louis Pasteur, Strasbourg, 67000, Fr.
 SO Advances in Chemistry Series (1982), 201(Electrochem. Spectrochem. Stud. Biol. Redox Compon.), 109-37
 CODEN: ADCSAJ; ISSN: 0065-2393
 DT Journal
 LA English
 AB The electrochem. behavior of mononuclear and dinuclear macrocyclic Cu complexes was studied on solid electrodes in H₂O and in organic media, and the factors controlling the redox properties of the complexes were

identified. In mononuclear complexes, the formal redox potential of the Cu(II)/Cu(I) system ranged from -0.10 to +0.49 V vs. SCE in H₂O. This potential was shifted to more pos. values by introducing thioether groups in the macrocycle and by increasing the size of the N-substituents. In dinuclear Cu complexes, sym. cryptates exhibited a single, reversible dielectronic interconversion between the dicopper(II) and the dicopper(I) cryptate. On the other hand, 1 nonsym. cryptate exhibited 2 successive and distinct monoelectronic reduction steps, as a consequence of the large difference between the 2 coordination sites in the ligand. Incremental stabilization of Cu(I) relative to Cu(II) was observed with changes in chemical composition of the ligand and coordination geometry of the Cu ions for all dinuclear macrocyclic Cu complexes studied.

- L8 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1982:95343 CAPLUS
 DN 96:95343
 TI Crystallographic and magnetic study of tetraisoethiocyanatocuprate(II)-bis{μ-[2-[(3-aminopropyl)amino]ethanolato]-N,N',μ-O}dicopper(II) polymer thiocyanate
 AU Nieminen, Kari
 CS Dep. Inorg. Chem., Univ. Helsinki, Helsinki, SF-00100/10, Finland
 SO Acta Chemica Scandinavica, Series A: Physical and Inorganic Chemistry (1981), A 35(10), 753-7
 CODEN: ACAPCT; ISSN: 0302-4377
 DT Journal
 LA English
 AB The title compound, is tetragonal, space group P/4n, with a 14.295(10) and c 10.359(6) Å; Z = 2. The structure was determined by direct and Fourier methods and refined by block-diagonal least-squares to an R of 0.056. The atomic coordinates are given. The structure consists of [Cu₂(C₅H₁₃N₂O)₂]₂⁺ dimers, where the Cu...Cu distance is 2.973 Å. The Cu(II) has square-pyramidal (4 + 1)-coordination with 2 N atoms and 2 O atoms in a basal plane with normal coordination bond distances and a S in the apical position with Cu-S distance of 2.732 Å. The N of the thiocyanate ion with the Cu-N distance of 1.999 Å is coordinated to the Cu(I) ion, forming a nearly tetrahedral [Cu(NCS)₄]₃⁻ anion. Each [Cu(NCS)₄]₃⁻ anion lies between 4 dimers, giving rise to a 2-dimensional netlike structure. The thiocyanate ion operating as a counter ion is disordered. The temperature dependence of the magnetic susceptibility (range 93.2-303.2 K) shows an intramol. antiferromagnetic coupling with a singlet-triplet separation of 141 cm⁻¹.
- L8 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1981:472366 CAPLUS
 DN 95:72366
 TI Binuclear metal complexes. XXXIX. Synthesis and properties of binuclear copper(II) complexes with [2-(2-pyridyl)ethylamino]alkanols and [2-(2-pyridyl)ethylthio]alkanols
 AU Nakamura, Masaaki; Mikuriya, Masahiro; Okawa, Hisashi; Kida, Sigeo
 CS Fac. Sci., Kyushu Univ., Fukuoka, 812, Japan
 SO Bulletin of the Chemical Society of Japan (1981), 54(6), 1825-9
 CODEN: BCSJA8; ISSN: 0009-2673
 DT Journal
 LA English
 AB Di-μ-alkoxo-bridged binuclear Cu(II) complexes, Cu(py-3-3-nno)X, Cu(py-3-2-nso)X, and Cu(py-3-3-nso)X (X = Cl, Br, ClO₄, NO₃, PF₆, BF₄), were prepared and characterized, where Hpy-3-3-nno, Hpy-3-2-nso, and Hpy-3-3-nso denote 3-[2-(2-pyridyl)ethylamino]-1-propanol, 2-[2-(2-pyridyl)ethylthio]ethanol, and 3-[2-(2-pyridyl)ethylthio]-1-propanol, resp. 2-[2-(2-pyridyl)ethylamino]ethanol (Hpy-3-2-nno) cannot form di-μ-alkoxo-bridged binuclear Cu(II) complexes because of the high strain in the fused ring system. These complexes exhibited a band at 22,000-27,000 cm⁻¹, characteristic of the di-μ-alkoxo-bridged

structure, the bands for Cu(py-3-2-nso)X and Cu(py-3-3-nso)X being lower in frequency compared with those for Cu(py-3-3-nno)X. Antiferromagnetic interaction was stronger and reduction potential (Cu(II)-Cu(I) → Cu(I)-Cu(I)) was higher for Cu(py-3-3-nso)X than those for Cu(py-3-3-nno)X. Cu(py-3-2-nso)Cl and Cu(py-3-2-nso)Br showed 2 reduction waves at about +0.15 and -0.4 V vs. SCE. These results are discussed in terms of the structure in solution on the basis of conductivity measurements.

L8 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1981:472293 CAPLUS
 DN 95:72293
 TI Synthesis, characterization, and x-ray structural analysis of the copper(I) derivative, [Me₂Ga(OCH₂CH₂NMe₂)N₂C₅H₇]Cu.PPh₃
 AU Chong, Kenneth S.; Rettig, Steven J.; Storr, Alan; Trotter, James
 CS Dep. Chem., Univ. British Columbia, Vancouver, BC, V6T 1Y6, Can.
 SO Canadian Journal of Chemistry (1981), 59(3), 518-23
 CODEN: CJCHAG; ISSN: 0008-4042
 DT Journal
 LA English
 GI

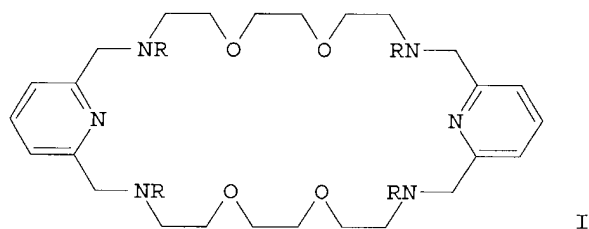


AB The Cu(I) complex I was prepared and its fluxional behavior in solution probed. Attempts were made to isolate the analogous Cu(I) carbonyl complex. Crystals of I are monoclinic, a 18.871(2), b 9.464(1), c 18.374(2) Å, β 109.92(1)°, Z = 4, space group P21/c. The structure was solved by direct methods and refined by full-matrix least-squares procedures to R = 0.028 and Rw = 0.035 for 2729 reflections with I ≥ 2σ(I). The Cu atom is bonded to the phosphine and to the tridentate ligand resulting in a distorted tetrahedral coordination geometry. The Cu-P distance of 2.156(1) Å is unusually short. Other important bond distances (corrected for libration) are: Cu-O, 2.163(2), Cu-N(pyrazolyl), 2.025(3), Cu-N(amino), 2.144(3), Ga-O, 1.896(3), Ga-N, 2.005(3), and Ga-C, 1.972(5) and 1.987(5) Å.

L8 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1981:173746 CAPLUS
 DN 94:173746
 TI Reaction between various copper(II) complexes and ascorbic acid or 3,5-di-tert-butylcatechol
 AU Oishi, Naoyasu; Nishida, Yuzo; Ida, Kazuhiko; Kida, Sigeo
 CS Fac. Sci., Kyushu Univ., Fukuoka, 812, Japan
 SO Bulletin of the Chemical Society of Japan (1980), 53(10), 2847-50
 CODEN: BCSJA8; ISSN: 0009-2673
 DT Journal
 LA English
 AB Electron-transfer reactions between various Cu(II) complexes and 2-electron donors [e.g., ascorbic acid, 3,5-di-tert-butylcatechol (I)] were investigated. Mononuclear Cu(II) complexes with a distorted-tetrahedral and a trigonal-bipyramidal structure and some

binuclear complexes were readily reduced to **Cu(I)** complexes by the 2-electron donors; mononuclear planar Cu(II) complexes were not reduced. The catalytic activities of these Cu(II) complexes for I oxidation by O₂ were studied in relation to the above reactions.

L8 ANSWER 13 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1981:46482 CAPLUS
 DN 94:46482
 TI A bicopper(I)/bicopper(II) redox cycle in the coordination and activation of dioxygen by a bicopper(I) complex of a macrocyclic ligand
 AU Burnett, Michael G.; McKee, Vickie; Nelson, S. Martin; Drew, Michael G. B.
 CS Dep. Chem., Queen's Univ. Belfast, Belfast, BT9 5AG, UK
 SO Journal of the Chemical Society, Chemical Communications (1980), (17), 829-31
 CODEN: JCCCAT; ISSN: 0022-4936
 DT Journal
 LA English
 GI



AB The rapid absorption of 1 mol of O₂ by 1 mol of the bicopper(I) complex [Cu₂L][ClO₄]₂ (L = macrocyclic amine I, R = H) in MeCN to give, probably, a (μ-peroxo)dicopper(II) complex, is followed by a slower anaerobic oxidative dehydrogenation of the ligand by the bound O₂. This regenerates the **Cu(I)** centers so that the cycle may be repeated, at least once again although more slowly. [Cu₂L₁][ClO₄]₂ (L₁ = I with R = Me) also absorbs 1 mol. of O₂ per mol of complex very quickly, but the subsequent consumption of O₂ is very much slower. This is attributed to a higher activation energy for the dehydrogenation of -CH₂-CH₂- compared with -CH₂-NH- groups.

L8 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1980:595891 CAPLUS
 DN 93:195891
 TI Crystallographic and magnetic study of catena-μ-iodo-bis{μ-[2-(3-aminopropyl)amino]ethanolato-N,N',μ-O}copper(II)} iodide dihydrate
 AU Nieminen, Kari; Nasakkala, Matti
 CS Dep. Inorg. Chem., Univ. Helsinki, Helsinki, SF-00100/10, Finland
 SO Acta Chemica Scandinavica, Series A: Physical and Inorganic Chemistry (1980), A34(5), 375-80
 CODEN: ACAPCT; ISSN: 0302-4377
 DT Journal
 LA English
 AB The title compound is triclinic, space group P₂1₂1, with a 8.105(7), b 11.294(10), c 11.931(12) Å, α 83.34(8), β 74.36(7), and γ 78.83(7)°; Z = 2. The structure was determined by the heavy atom method and refined by block-diagonal least-squares to an R of 0.043. The structure consists of [Cu₂(C₅H₁₃N₂O)₂]₂²⁺ dimers, where Cu...Cu distances are 2.976 and 2.969 Å. Each Cu has square-pyramidal (4 + 1)-coordination with the 2 O and 2 N atoms in the basal plane and an ion in the apical position. The coordinated I (Cu-I 2.996 and 3.026 Å) lies between 2 dimers, giving rise to a polymeric

structure. The temperature dependence of the magnetic susceptibility, studied at 93.2-303.2 K, shows an intramol. antiferromagnetic coupling with a singlet-triplet separation of 65 cm⁻¹.

L8 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1980:557806 CAPLUS
DN 93:157806
TI Binuclear metal complexes. Part XXXIV. Electrochemical properties of some alkoxy-bridged binuclear copper(II) complexes with sulfur-containing ligands
AU Mikuriya, Masahiro; Aihara, Makoto; Nishi, Yumiko; Okawa, Hisashi; Kida, Sigeo
CS Fac. Sci., Kyushu Univ., Fukuoka, 812, Japan
SO Chemistry Letters (1980), (7), 795-8
CODEN: CMLTAG; ISSN: 0366-7022
DT Journal
LA English
AB Electrochem. properties of alkoxy-bridged binuclear Cu₂(II) complexes with S-containing tridentate ligands, Cu₂{RS(CH₂)₂NH(CH₂)₃O}₂(ClO₄)₂ and Cu₂{R₂N(CH₂)₂S(CH₂)₂O}₂X₂ (R = alkyl; X = Cl, Br), were investigated. The former showed a 2-electron reduction, Cu(II)-Cu(II) → Cu(I)-Cu(I), near -0.2 V (vs. SCE), while the latter showed 2 one-electron redns. at .apprx.0.2 and -0.3 .apprx.-0.6 V (vs. SCE): Cu(II)-Cu(II) → Cu(II)-Cu(I) → Cu(I)-Cu(I).

L8 ANSWER 16 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1980:525547 CAPLUS
DN 93:125547
TI Antiinflammatory effects of some copper complexes
AU Brown, D. H.; Smith, W. E.; Teape, J. W.; Lewis, A. J.
CS Dep. Pure Appl. Chem., Univ. Strathclyde, Glasgow, G1 1XL, UK
SO Journal of Medicinal Chemistry (1980), 23(7), 729-34
CODEN: JMCMAR; ISSN: 0022-2623
DT Journal
LA English
AB Cu complexes of ligands which themselves are antiinflammatory and some which are not were prepared and tested for antiinflammatory activity in guinea pigs and rats by local, s.c., and oral administration. Species differences, method of application, and the nature of the Cu complex affected the activity. More Cu complexes had antiinflammatory activity after s.c. than after oral administration, although significant oral activity was obtained at high doses. Cu complexes were less irritant than the free ligands. Both Cu(I)- and Cu(II) complexes had similar properties in the edema model, their activity apparently due to the formation of a common metabolite.

L8 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1979:95855 CAPLUS
DN 90:95855
TI The crystal structure of {2-[(3-aminopropyl)amino]ethanolato}copper(II) bromide tetramer trihydrate, [Cu₄(C₅H₁₃N₂O)₄]Br₄·3H₂O
AU Nieminen, Kari; Pajunen, Aarne
CS Dep. Inorg. Chem., Univ. Helsinki, Helsinki, Finland
SO Acta Chemica Scandinavica, Series A: Physical and Inorganic Chemistry (1978), A32(6), 493-9
CODEN: ACAPCT; ISSN: 0302-4377
DT Journal
LA English
AB The title compound crystallized in the monoclinic space group P2₁/n with a 18.648(8), b 22.013(8), c 9.327(5) Å, and β 90.08(4)°; Z = 4. The structure was determined by direct and Fourier methods from 3914 independent reflections collected with an automated 4-circle diffractometer and refined by block-diagonal least-squares methods to an R

of 0.049. The complex has a tetranuclear structure with Cu...Cu distances 3.186-3.555 Å and a cubane-type Cu₄O₄ core. Four of the twelve Cu-O distances are long (2.521-2.633 Å) and 8 short (1.951-1.976 Å). Two of the longer distances are perpendicular to the other two. The amine is tridentate forming 6- and 5-membered rings with Cu. The cation [Cu₄(C₅H₁₃N₂O)₄]⁴⁺ has S₄ pseudosymmetry. Each Cu(II) ion has a distorted octahedral (4+2) coordination with 4 atoms in equatorial positions at average distances Cu(i)-N(i1) 1.991, Cu(i)-N(i2) 2.025, Cu(i)-O(i) 1.955, Cu(i)-O(j) 1.969 Å, and an O atom and a bromide ion at average distances 2.583 and 3.240 Å in apical positions. One of the 4 bromide ions forms a bridge between the tetranuclear units in the direction of the c-axis.

L8 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1978:30649 CAPLUS
 DN 88:30649
 TI The crystal structure of a tetrameric copper(II) complex of
 2-[3-aminopropyl]amino]ethanol: [Cu₄(C₅H₁₃N₂O)₄](NO₃)₄·2H₂O
 AU Nieminen, Kari
 CS Dep. Inorg. Chem., Univ. Helsinki, Helsinki, Finland
 SO Acta Chemica Scandinavica, Series A: Physical and Inorganic Chemistry
 (1977), 31(8), 693-9
 CODEN: ACAPCT; ISSN: 0302-4377
 DT Journal
 LA English
 AB The crystal structure of tetrakis-μ₃-{2-[(3-aminopropyl)amino]ethanolato}tetracopper(II) tetranitrate dihydrate was determined by 3-dimensional x-ray methods. The compound crystallized in the monoclinic space group C2/c with a 27.312(15), b 20.936(13), c 17.519(9) Å, and β 128.82(3)°, Z = 8. The structure was refined by block-diagonal least-squares methods to an R of 0.070 (R_w = 0.101) on the basis of 3400 independent reflections. The complex has a tetranuclear cubane-type structure. The four Cu ions, with interat. distances 3.224-3.433 Å, are connected by O bridges. The Cu-O distances vary between 1.937 and 2.633 Å. The cation [Cu₄(C₅H₁₃N₂O)₄]⁴⁺ has S₄ pseudo-symmetry. These tetranuclear units are joined by NO₃ groups and between these chains there are bridges formed by water mols. and nitrate ions. Each Cu ion has a distorted octahedral (4 + 2) coordination. The equatorial interat. distances (mean values) of Cu(i)-N(i1) 1.99, Cu(i)-N(i2) 2.02, Cu(i)-O(i) 1.95, and Cu(i)-O(j) 1.98 Å are coordination bond values, and the axial Cu-O distances 2.59 and 2.70 Å correspond to semicoordination bonds.

L8 ANSWER 19 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1977:574678 CAPLUS
 DN 87:174678
 TI Study of copper electroplating from complex electrolytes. IV. Effect of temperature on the kinetics of the reduction of complexes of copper(II) with aminoligands
 AU Shapnik, M. S.; Petrova, T. P.; Galeev, V. N.
 CS Kazan. Khim.-Tekhnol. Inst., Kazan, USSR
 SO Elektrokhiimiya (1977), 13(8), 1200-3
 CODEN: ELKKAX; ISSN: 0424-8570
 DT Journal
 LA Russian
 AB The effect of temperature on the rate of the reduction of monoethanolamine, ethylenediamine (I) and ethylenediaminetetraacetate (II) complexes of Cu(II) as compared to aquo complexes was studied by measuring current-potential and time-potential curves at varying temperature. The activation energy of Cu-I and Cu-II complexes, which was calculated from the dependence of transient time vs. absolute temperature,

± 0.2 kcal/mol.

L8 ANSWER 20 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1974:432603 CAPLUS
DN 81:32603
TI Electrochemical behavior of copper in tris(monoethanolamine)copper
dichloride solutions in the presence of an excess of monoethanolamine
AU Sokol'skaya, R. A.; Kheifets, V. L.
CS USSR
SO Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1974),
47(5), 1080-4
CODEN: ZPKHAB; ISSN: 0044-4618
DT Journal
LA Russian
AB The redox potentials were measured for the system: $\text{Cu}(\text{MEA})_3^{2+} + e^- \rightarrow \text{Cu}(\text{MEA})^+ + 2\text{MEA}$ (where MEA = monoethanolamine) at a constant ratio of Cu(II) and Cu(I) concns. and varying MEA concentration. The dependence of redox potentials on the $\log [\text{Cu}(\text{MEA})_3^{2+}/\text{Cu}(\text{MEA})^+]$ was also studied. The instability consts. for $\text{Cu}(\text{MEA})_3^{2+}$ and $\text{Cu}(\text{MEA})^+$ are 8.14×10^{-12} and 8.9×10^{-7} , resp. The dependence of exchange c.d. on excess MEA is also presented.

L8 ANSWER 21 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1969:96130 CAPLUS
DN 70:96130
TI Synthetic reactions by complex catalysts. XII. Copper-catalyzed reaction of isocyanide with alcohol
AU Saegusa, Takeo; Ito, Yoshihiko; Kobayashi, Shiro; Hirota, Kiwami; Takeda, Nobuyuki
CS Kyoto Univ., Kyoto, Japan
SO Canadian Journal of Chemistry (1969), 47(7), 1217-22
CODEN: CJCHAG; ISSN: 0008-4042
DT Journal
LA English
AB The reaction of alkyl isocyanide with alc. to produce alkyl formimidate requires catalysis by metal compds. The catalysts are classified into two groups. The first group includes metallic Cu, and the oxides of copper [Cu(I) and Cu(II)], silver, and mercury, which induce the isocyanide reactions of various alcs. including saturated and unsatd. alcs. and amino-alc. The second group of catalysts are the chlorides of Cu(I), silver, zinc, and cadmium, which cause the reactions of isocyanide only with special alcs. having strong coordinating tendencies toward the catalyst, as exemplified by allyl alc. and β -(N,N-dimethylamino)ethanol. Among these catalysts, metallic Cu and copper oxides are the most effective and give the products almost quant. The difference in catalyst activity between the two groups of catalyst was explained by assuming a ternary complex consisting of the catalyst, isocyanide, and alc. as the site of reaction.